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**VIA ELECTRONIC COMMENT FILING SYSTEM**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, D.C. 20554

Re: *In the Matter of PCS Partners, L.P. Petition for Waiver of 47 C.F.R. § 90.353(b)*  
*and Request for Extension of Time and for Expedited Treatment,*  
WT Docket No. 16-149, File Nos. 0007232430 et al.  
**Notice of Ex Parte Communication**

Dear Ms. Dortch:

On May 9, 2017, undersigned counsel for PCS Partners, L.P. (“PCSP”) spoke via teleconference with the following Wireless Telecommunications Bureau (“Bureau”) staff: James Schlichting, Senior Deputy Bureau Chief; Theodore Marcus, Special Counsel – Network Security Policy; Lloyd Coward, Deputy Chief, Mobility Division; Melissa Conway, Attorney Advisor, Mobility Division; Heather Moelter, Attorney Advisor, Mobility Division; and Jeremy Reynolds, Analyst, Mobility Division. The purpose of the call was to inquire about the status of PCSP’s above-referenced Petition,<sup>1</sup> and to provide an update on PCSP’s ongoing efforts to develop a viable technology solution using its Multilateration Location and Monitoring Service (“M-LMS”) spectrum.<sup>2</sup>

This notice is filed pursuant to Section 1.1206(b) of the Commission’s rules, and provides relevant information for the benefit of Commission staff who have not been actively involved in this matter.

As background, since the Commission first auctioned M-LMS licenses in 1999, no entity has used the M-LMS spectrum to provide any service authorized under the M-LMS rules. As illustrated by the record in various Commission proceedings, the primary reasons for this underutilization include changes in location

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<sup>1</sup> WT Dkt. 16-149, PCS Partners, L.P., Petition for Waiver of 47 C.F.R. § 90.353(b), and Request for Extension of Time and For Expedited Treatment (Apr. 15, 2016), Amendment to Petition for Waiver of 47 C.F.R. § 90.353(b), and Request for Extension of Time and For Expedited Treatment (Aug. 19, 2016) (“Petition”).

<sup>2</sup> M-LMS is defined as “a system that is designed to locate vehicles or other objects by measuring the difference of time of arrival, or difference in phase, of signals transmitted from a unit to a number of fixed points or from a number of fixed points to the unit to be located.” 47 C.F.R. § 90.7.

position technology; the unique constraints of the M-LMS rules; uncertainty created by Commission decisions in 2006 to propose new M-LMS rules and, in 2014, to terminate that proceeding; and the persistent lack of commercially available equipment for the M-LMS bands.<sup>3</sup>

In explicit recognition of these realities, the Bureau at various time granted PCSP and other M-LMS licensees several extensions of applicable buildout deadlines.<sup>4</sup> The Bureau also granted one M-LMS licensee a waiver of the requirement that vehicle location services constitute M-LMS systems' "primary operations," and an additional waiver to allow the licensee to take advantage of advancements in multilateration technologies, enabling it to pursue deployment of its proprietary location technology.<sup>5</sup>

In 2014, promptly after the Commission terminated the proceeding in which it had proposed to substantially amend the M-LMS rules, the Bureau granted PCSP an extension of two years to meet the mid-term buildout deadline.<sup>6</sup> The Bureau stated that the two-year extension "will permit M-LMS licensees to make appropriate business decisions regarding their M-LMS licenses, including deployment of services or, if necessary, to engage in secondary market transactions."<sup>7</sup>

Although it disagreed with both the brief extensions of time granted in 2014 and the rationale for the extensions,<sup>8</sup> PCSP nonetheless continued to investigate technology options, and ultimately developed a clear path forward for deployment of services in its M-LMS spectrum that takes into account both the obligation to provide location functionality and the realities of current and anticipated markets for equipment and services.<sup>9</sup> PCSP discussed its plans with the Bureau's Mobility Division in March 2016, and filed the Petition on April 15, 2016.

The Petition requests a waiver of Section 90.353(b) of the rules – which permits the transmission of voice or non-voice "status and instructional messages" only if such messages are related to the location or monitoring functions of the system<sup>10</sup> – in order to permit, in addition to location services, short, infrequent packet transmissions in the M-LMS A Block sub-band (904.0-909.75 MHz) and C Block sub-band (921.750-927.250 MHz) at scheduled times. The waiver will enable PCSP to deploy a system that provides both M-LMS and machine type communications for narrowband Internet of Things applications and services, utilizing equipment that incorporates the latest version of the 3<sup>rd</sup> Generation Partnership

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<sup>3</sup> See, e.g., PR Dkt. 93-61, WT Dkt. 06-49, WT Dkt. 11-49, WT Dkt. 12-202, and decisions cited in n.3, *infra*.

<sup>4</sup> See, e.g., *Warren C. Havens*, 19 FCC Rcd 23742 (WTB MD 2004); *FCR, Inc.*, 20 FCC Rcd 4293 (WTB MD 2005); *Progeny LMS, LLC*, 21 FCC Rcd 5928 (WTB MD 2006); *Multilateration Location and Monitoring Service Construction Requirements*, 22 FCC Rcd 1925 (WTB MD 2007); *Progeny LMS, LLC and PCS Partners, L.P.*, 23 FCC Rcd 17250 (WTB 2008).

<sup>5</sup> *Request by Progeny LMS, LLC for Waiver of Certain M-LMS Rules*, 26 FCC Rcd 16878 (2011), *recon. pending*.

<sup>6</sup> *Requests by FCR, Inc., et al. for Waiver and Limited Extension of Time*, 29 FCC Rcd 10361 (WTB MD 2014).

<sup>7</sup> *Id.* at ¶ 17.

<sup>8</sup> See WT Dkt. 12-202, PCS Partners, L.P. Petition for Partial Reconsideration and Clarification, (Sept. 29, 2014), PCS Partners, L.P. Application for Review (Feb. 17, 2017).

<sup>9</sup> It remains the case that commercially available equipment for the M-LMS bands is not available, nor has Progeny agreed to license its proprietary technology to PCSP.

<sup>10</sup> 47 C.F.R. § 90.353(b).

Project (“3GPP”) Long Term Evolution (“LTE”) standard.<sup>11</sup> This standard includes OTDOA (Observed Time Difference of Arrival), an LTE-network based multilateration method that uses Position Reference Signals to detect a user’s location. PCSP proposed that its Petition be granted subject to the condition that PCSP complete certain milestone events, including equipment approval, co-existence testing, approval to launch commercial service, and service initiation.<sup>12</sup>

Waiver of Section 90.353(b) and extension of the buildout dates is fully consistent with the purposes of the M-LMS rules. These rules generally were intended to allow “efficient and competitive use” of the spectrum and to “promote certainty for all users of the band so they can invest in the equipment and facilities necessary to bring quality, low cost services to consumers,”<sup>13</sup> while Section 90.353(b) was intended to limit the potential for interference to other users of the band.<sup>14</sup>

PCSP has shown that its proposed operations in fact limit the potential for interference to other band users.<sup>15</sup> Its system can be implemented under existing power limit and interference protection requirements.<sup>16</sup> Further mitigating concerns about potential interference is the fact that PCSP’s proposed effective bandwidth use will be comparable to the bandwidth use already approved for Progeny in its M-LMS spectrum; indeed, in PCSP’s proposed system, significantly less bandwidth is needed to perform the location functions in comparison to the bandwidth utilized by Progeny’s approved solution, while the bandwidth utilized by IoT applications can be controlled by limiting the number of devices per cell to a level that precludes unacceptable interference to other users.<sup>17</sup> Thus, no user will be materially impacted by transmissions resulting from PCSP’s proposed solution. And, PCSP will remain subject to the condition that it demonstrate through field tests that its system does not cause “unacceptable levels of interference” to Part 15 devices that operate on a secondary basis,<sup>18</sup> as well as the obligation to not cause interference to, and to tolerate interference from, other band users.<sup>19</sup>

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<sup>11</sup> Petition at 2, 4-5, 9-11.

<sup>12</sup> Petition at 12-13.

<sup>13</sup> *Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems*, 10 FCC Rcd 4695, ¶¶ 1, 2 (1995).

<sup>14</sup> *Id.* at ¶¶ 2, 23.

<sup>15</sup> See Petition at 7-8; WT Dkt. 16-149, Reply Comments of PCS Partners, L.P., (June 3, 2016) (and attached Declaration of Dr. Nat Natarajan) (“PCSP Reply Comments”).

<sup>16</sup> 47 C.F.R. §§ 90.353(a), (c), (d).

<sup>17</sup> See Petition at n.22. By way of comparison, PCSP’s proposed narrowband solution is intended to utilize 1.4 MHz (35% of the approximately 4 MHz B and C Block bandwidth utilized by the approved Progeny system) to offer both M-LMS and IoT applications. If PCSP were to provide only M-LMS, bandwidth usage would be only approximately 7% of the bandwidth used by Progeny’s approved location determination system. Adding IoT-related traffic would result in bandwidth usage comparable to Progeny’s usage, based on a duty cycle of about 56% compared to the 20% duty cycle of the Progeny solution. Moreover, the PCSP solution has sufficient flexibility in its smart scheduler function to vary the duty cycle in response to traffic demand and mitigate any unlikely interference concern.

<sup>18</sup> 47 C.F.R. § 90.353(d).

<sup>19</sup> 47 C.F.R. § 90.353(a).

The Bureau sought public comment on the Petition in May 2016.<sup>20</sup> Six parties commented on various aspects of the Petition; however, no commenter asserted that its equipment or customers in fact use any portion of the frequencies or geographic areas that are the subject of the request. Rather, the commenters raised speculative concerns about the potential for interference to unlicensed Part 15 operations. In response, PCSP explained the basis for its determination that its proposed operations are highly unlikely to cause interference to other band users, and reiterated that the field testing safety net and other protections embodied in the rules apply.<sup>21</sup>

Commenters also ignored the significant public interest benefits supporting grant of the Petition, including innovative and efficient use of the spectrum, and promoting competition both in the M-LMS bands and among location technologies and services – all key purposes of the rules.<sup>22</sup>

Following the comment cycle, PCSP met with Bureau staff and discussed the Part 15 parties' assertions of potential interference. Dr. Natarajan, PCSP's engineering consultant, addressed questions from Commission engineers concerning various operational matters related to the potential for interference, including power limits, data rates, bandwidth usage and duty cycle, and reiterated that PCSP's proposed operations are unlikely to cause interference to Part 15 users. PCSP also reviewed its ongoing discussions with equipment vendors, as well as the rationale for its proposed milestones.<sup>23</sup>

On the May 9, 2017 teleconference, I provided an update on PCSP's efforts over the past eleven months while its Petition has been pending. During this time, PCSP has continued to make substantial progress toward its service plans. Among other things, PCSP reached out to representatives of Part 15 stakeholders who had raised concerns about the potential for interference. In a discussion with the chief engineer of one such stakeholder, PCSP's engineering representatives addressed concerns about co-existence testing, and confirmed PCSP's commitment to cooperative testing of its planned system with equipment of unlicensed stakeholders, as well as stakeholder input to a test plan. They also discussed general concerns about the possible impact of PCSP's proposed operations on the company's equipment. PCSP explained its proposed operations (bandwidth usage, power, duty cycle, etc.) relative to the proposed operations of Progeny in the M-LMS bands, with which the Part 15 stakeholder was familiar. The parties agreed to work cooperatively and to share relevant information at appropriate times as PCSP moves forward.

In addition, PCSP has made significant advancements in its discussions with equipment vendors. In particular, PCSP held preliminary discussions with numerous OEMs, developed and distributed a Request for Proposal ("RFP") to multiple vendors, and received and analyzed responses to the RFP. PCSP is considering the proposed costs and timelines, while awaiting action on its Petition. Notably, vendor responses have been positive and PCSP is confident that its proposed milestones remain viable. And, PCSP will be able to demonstrate that in designing and constructing its M-LMS system, it has appropriately taken into consideration the goal of minimizing interference to existing Part 15 devices.

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<sup>20</sup> Public Notice, *Wireless Telecommunications Bureau Seeks Comment on PCS Partners' Request for Multilateration Location and Monitoring Service Waiver and Construction Extension*, DA 16-491, WT Dkt. 16-149 (May 4, 2016).

<sup>21</sup> See PCSP Reply Comments.

<sup>22</sup> See Petition at 4-7.

<sup>23</sup> See WT Dkt. 16-149, PCS Partners, L.P. Notice of Ex Parte Communication (June 22, 2016).



Finally, I reiterated that PCSP and its engineers are available to address any additional questions the staff may have regarding the Petition.

This notice is being filed in the above-referenced docket for inclusion in the public record. Please contact me with any questions.

Sincerely,

/s/ E. Ashton Johnston

E. Ashton Johnston  
of TELECOMMUNICATIONS LAW PROFESSIONALS PLLC

cc (via email):       Melissa Conway  
                              Lloyd Coward  
                              Theodore Marcus  
                              Heather Moelter  
                              Jeremy Reynolds  
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Relevant materials in WT Docket No. 16-49:

1. Petition for Waiver of 47 C.F.R. § 90.353(b) and Request for Extension of Time and for Expedited Treatment (April 15, 2016) <https://ecfsapi.fcc.gov/file/10705172566192/16070501-2.pdf>
2. Public Notice (May 4, 2016) <https://ecfsapi.fcc.gov/file/60001831642.pdf>
3. Reply Comments and Declaration (June 3, 2016) <https://ecfsapi.fcc.gov/file/60002091932.pdf>
4. Notice of Ex Parte Communication (June 22, 2016) [https://ecfsapi.fcc.gov/file/106222961321250/PCSP%20Ex%20Parte%20Notice\\_Filed%20Jun%2022%202016%20\(00095982xC33F1\).pdf](https://ecfsapi.fcc.gov/file/106222961321250/PCSP%20Ex%20Parte%20Notice_Filed%20Jun%2022%202016%20(00095982xC33F1).pdf)
5. Amendment to Petition for Waiver of 47 C.F.R. 90.353(b) and Request for Extension of Time and for Expedited Treatment (August 19, 2016) [https://ecfsapi.fcc.gov/file/10819055845942/Amendment%20to%20Petition%20for%20Waiver%20and%20Extension%20\(00098563xC33F1\).pdf](https://ecfsapi.fcc.gov/file/10819055845942/Amendment%20to%20Petition%20for%20Waiver%20and%20Extension%20(00098563xC33F1).pdf)